

WHAT IS CLAIMED IS:

1. A circuit with adaptive amplifier output common mode voltage adjustment comprising:

5 a differential pre-amplifier;

a re-generated comparator having a differential input coupled to a differential output of the pre-amplifier; and

10 a replica comparator coupled to a common mode node of the pre-amplifier for adjusting a common mode of the pre-amplifier.

2. The circuit of claim 1 wherein the replica comparator is an equivalent circuit to the re-generated comparator.

15 3. The circuit of claim 1 wherein the replica comparator is a scaled version of the re-generated comparator.

4. The circuit of claim 1 wherein the replica comparator is a scaled half-replica of the re-generated comparator.

20 5. The circuit of claim 1 wherein the re-generated comparator is a CMOS cross coupling latch.

25 6. The circuit of claim 5 wherein the replica comparator is a CMOS cross coupling latch.

7. The circuit of claim 5 wherein the replica comparator is a half CMOS cross coupling latch.

5 8. The circuit of claim 7 further comprising a buffer coupled between the replica comparator and the pre-amplifier.

9. The circuit of claim 1 wherein the pre-amplifier has a resistive common mode feedback.

10 10. A method for adaptively adjusting an output common mode voltage of an amplifier comprising:

coupling an output of a pre-amplifier circuit to an input of a re-generated comparator; and

15 adjusting a common mode voltage of the pre-amplifier such that an output common mode voltage of the pre-amplifier is at the optimized common mode voltage of the re-generated comparator.

20 11. The method of claim 10 wherein the step of adjusting the common mode voltage of the pre-amplifier comprises coupling an output of a replica comparator to a common mode node of the pre-amplifier, wherein the replica comparator is a replica of the re-generated comparator.

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12. The method of claim 10 wherein the step of adjusting the common mode voltage of the pre-amplifier comprises coupling an output of a half-replica comparator to a common mode node of the pre-amplifier, wherein the half-replica comparator is a half-
5 replica of the re-generated comparator.